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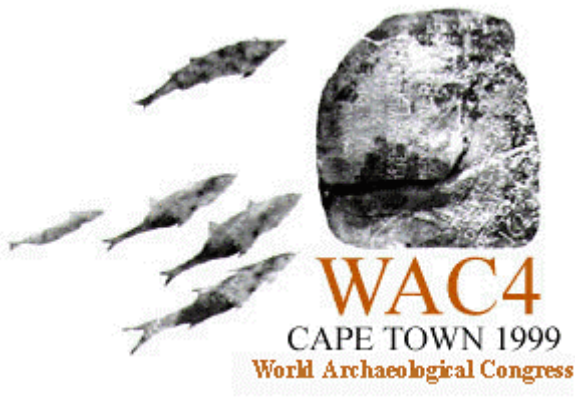

Symposium: Early Human Behaviour, Technology and Development

Forbidden Archeology of the Early and Middle Pleistocene: Evidence for Physiologically and Culturally Advanced Humans

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Abstract:

In 1998, M. Morwood reported stone tools at 800ka years on Flores Island, Indonesia, 15 miles from nearest land. Morwood concluded toolmaking hominids arrived by boat. According to standard ideas, the only hominid then in existence was *Homo erectus*. Boatmaking and sailing are normally associated with anatomically modern humans. Morwood chose to elevate *Homo erectus* culturally, but one could also elevate the Flores hominid physiologically to *Homo sapiens sapiens*. Anatomically modern human femurs of the same age from Java offer corroborating evidence. In 1997, H. Thieme reported advanced wooden hunting spears in German coal deposits about 400ka years old. Spears are normally associated exclusively with anatomically modern humans. Thieme chose to raise the cultural status of European *Homo erectus*, but another possibility is to posit anatomically modern humans. Discoveries of anatomically modern human bones by Boucher de Perthes at Abbeville, France, in deposits the same age as the German spears, offer corroborating evidence. This paper reviews other skeletal and artifactual evidence for anatomically modern humans in the Early and Middle Pleistocene in Africa, North America, and South America, in addition to the Asian and European evidence mentioned above.

In our book *Forbidden Archeology*, Richard Thompson and I suggested that commitment to theories of a relatively late origin of anatomically modern humans from *Homo erectus* has prevented archeologists from recognizing possible evidence for an anatomically modern human presence in geological contexts older than the latest Pleistocene. Examples of such treatment of evidence according to disciplinary

preconceptions, which constitute a kind of knowledge filtering, can be drawn from the most recent archeological discoveries, as well as discoveries recorded in the archeological literature of the past one hundred and fifty years.

In 1991, 1994, and 1997, expeditions to Flores Island in eastern Indonesia recovered stone tools from the Ola Bula formation at Mata Menge (Morwood et al. 1998). Earlier expeditions had also found stone tools on Flores, but the reports have been largely ignored. The stone tools were found *in situ*, along with animal bones (*Stegodon*, crocodile, giant rat), in primary stratified deposits of tuffaceous sandstone, with only slight signs of subsequent reworking. About the tools, Morwood et al. (1998: 174) stated:

> The Mata Menge deposits contain pieces of volcanic rock and chert identified as artefacts on the basis of well-defined flake scars, ring cracks, bulbs of percussion and systematic edge damage suggestive of retouch. . . . Of 45 stone pieces recovered in a 1994 excavation, 14 were identified as artefacts according to technological criteria. Of thse, 14 artefacts, four were subsequently examined under high magnification and found to have edge damage, striations, polishing and residues indicating use in the processing of plant materials.

The deposits containing the tools were dated using the zircon fission track method (Morwood et al. 1998). Samples were taken from above and below the tool bearing layers. Sample MM1 from immediately below the tool-bearing layers yielded an age of 880,000 years and sample MM2 from directly above the tool-bearing layers yielded an age of 800,000 million years. These ages are consistent with a paleomagnetic date of 780,000 years from a transition layer below the tool-bearing strata and with the Early Pleistocene faunal remains.

Morwood et al. (1998: 176) concluded, however, 'The age of the artefacts also indicates that they were produced by *Homo erectus* rather than *Homo sapiens*.' This is a clear example of the kind of knowledge filtering process posited in *Forbidden Archeology*.

From their conviction that the tools were the work of *Homo erectus*, Morwood et al. were compelled to alter their conceptions of that hominid's level of culture.

During the early Pleistocene, the island of Java was sometimes connected with the Southeast Asian mainland (the Sunda continental shelf), but between Java and Flores there are three deepwater straits. The narrowest of these was at least 19 kilometers wide, even during periods of lowered ocean levels. Morwood et al. (1998: 176) noted, 'The impoverished nature of the fauna on Flores . . . seems to negate a connection with Sunda at any time. The presence of endemic pygmy elephants, giant reptiles and giant rats in the Early Pleistocene also suggests a continued insular context.'

The implication of an "insular context" is that *Homo erectus*, or whatever hominid was responsible for the tools, had to have arrived by boat. This would require a revolutionary upward adjustment of the cultural level of *Homo erectus* to include ocean crossing with vessels. Morwood et al. (1998: 176) noted:

> Previously . . . this capacity was thought to be the prerogative of modern humans and to have only appeared in the Late Pleistocene, with the earliest widely accepted evidence for watercraft being the colonization of Australia by modern humans . . . between 40,000 and 60,000 years ago. Outside this region, the technology to undertake even limited water crossings is not clearly evidence until much later, at the end of the Pleistocene.

But perhaps instead of elevating *Homo erectus* to a level of culture previously associated exclusively with anatomically modern humans, we should consider the possibility that the Flores hominid may have in fact been fully human. Some reason for this can be found in nearby Java.

In 1891, Eugene Dubois discovered at Trinil a *Homo erectus* skullcap. The following year, he found a femur in the same deposits, at a distance of about 15 meters from the place where the skullcap was found. He nevertheless associated the femur with the skullcap, an association that eventually came to be accepted by most physical anthropologists. During the 1930s, Dubois reported additional hominid femurs in boxes of fossils he had sent from Java.

But subsequently Day and Molleson (1973) concluded that 'the gross anatomy, radiological [X-ray] anatomy, and microscopical anatomy of the Trinil femora does not distinguish them significantly from modern human femora.' They also said that *Homo erectus* femurs from China and Africa are anatomically similar, and distinct from those of Trinil. The layers in which the skullcap and femurs were found have a potassium-argon date of about 800ka years, roughly contemporary with the Flores finds.

In 1984, Richard Leakey and others described an almost complete skeleton of *Homo erectus* in Kenya. Examining the leg bones, these scientists found that the femurs differed substantially from those of modern human beings. About the Java discoveries, Leakey and his coworkers (Brown et al. 1985) stated: "From Trinil, Indonesia, there are several fragmentary and one complete (but pathological) femora. Despite the fact that it was these specimens that led to the species name, there are doubts as to whether they are *H. erectus* with the most recent consensus being that they probably are not." In summary, modern researchers say the Trinil femurs are not like those of *Homo erectus* but are instead like those of modern *Homo sapiens.* What is to be made of these revelations? The Java thighbones have traditionally been taken as evidence of *Homo erectus*) existing around 800ka years ago in the Middle Pleistocene. Accepting their traditional provenance, it now appears we can accept them as evidence for anatomically modern humans existing 800ka years ago.

Let's now consider a similar case from Europe. Thieme (1997) reported discoveries of artifacts in Middle Pleistocene interglacial deposits uncovered in the course of open-cast coal mining at Schöningen Germany. The artifact locations are 8-15 meters from the surface.

The oldest level of human occupation (Schöningen I), with stone tools, burnt flint, and animal bones, dates to the earliest Holstein interglacial. Schöningen II, representing the Reinsdorf interglacial, has five cultural levels.

> Level 1 contained numerous flint artefacts and three worked branches of common silver fir, *Abies alba.* The wooden tools. . . have a diagonal groove cut in one end . . . . It is postulated that the grooves were for holding flint tools or flakes. If this supposition is correct, these implements represent the oldest composite tools yet discovered. (Thieme 1997: 808)

In Level 4 of Schöningen II, Thieme found numerous stone tools of advanced type (including points and carefully retouched scrapers) as well as three wooden spears, made from spruce. Thieme (1997: 809) noted:

> The spears are made from individual trees, which were felled, and the branches and bark were removed; the tips/distal ends are worked from the base of the three. All three spears, although of different lengths were manufactured to the same pattern, with the maximum thickness and weights at the front; the tails are long, and taper toward the proximal end. In all of these respects, they resemble modern javelins, and were made as projectile weapons rather than thrusting spears or lances.

Thieme gave these spears an age of 400ka years (during the fourth to the last interglacial, oxygen isotope stage 11). The oldest throwing spear previously discovered, from Lehringen, Germany, was just 125ka years old (Thieme 1997: 810).

The spears discovered by Thieme are therefore quite revolutionary. They are causing archeologists to upgrade the *cultural* level of the Middle Pleistocene inhabitants of Europe, usually characterized as ancestors of anatomically modern humans, to a level previously associated exclusively with anatomically modern humans. Thieme said, “The discovery of spears designed for throwing means that theories of the development of hunting capacities. . . of Middle Pleistocene hominids must be revised.”

But just as in the case of the Flores finds, we could upgrade the *anatomical* level of the Middle Pleistocene inhabitants of northern Europe to the level of modern humans. There are skeletal remains from the Moulin Quignon site in Abbeville, France, that would allow this. They are roughly contemporary with the Schöningen spears. Unfortunately, not many current workers in archeology are aware of the Moulin Quignon discoveries, and if they are aware of them, they are likely to know of them only from very brief (and misleading) negative evaluations.

In the 1840s Boucher de Perthes discovered stone tools in the Middle Pleistocene high level gravels of the Somme, at Moulin Quignon and other sites. At first, the scientific community, particularly in France, was not inclined to accept his discoveries as genuine. . Later, leading British archeologists visited the sites of Boucher de Perthes's discoveries and pronounced them genuine. But the exact nature of the maker of these tools remained unknown. Then in 1863, Boucher de Perthes discovered at Moulin Quignon additional stone tools and an anatomically modern human jaw. The jaw inspired much controversy, and was the subject of a joint English-French commission. (Falconer et al. 1863, Delesse 1863)

The English members of the commission thought the recently discovered stone tools were forgeries that had been artificially introduced into the Moulin Quignon strata. They thought the same of the jaw. To settle the matter, the commission paid a surprise visit to the site. Five flint implements were found in the presence of the scientists. The commission approved by majority vote a resolution in favor of the authenticity of the recently discovered stone tools. Sir John Prestwich remained in the end skeptical but nevertheless noted (1863: 505) that "the precautions we took seemed to render imposition on the part of the workmen impossible."

In addition to confirming the authenticity of the stone tools from Moulin Quignon, the commission voted in favor of the following statements:

> The jaw in question was not fraudulently introduced into the gravel pit of Moulin Quignon. . . . All leads one to think that the deposition of this jaw was contemporary with that of the pebbles and other materials constituting the mass of clay and gravel designated as the black bed, which rests immediately above the chalk. (Falconer et al. 1863: 452)

This was exactly the conclusion desired by Boucher de Perthes. Only two members, Busk and Falconer, abstained.

Their scientific objections having been effectively countered, the English objectors, including John Evans, who was not able to join the commission in France, were left with finding further proof of fraudulent behavior among the workmen at Moulin Quignon as their best weapon against the jaw. Taking advantage of a suggestion by Boucher de Perthes himself, Evans sent Henry Keeping, a working man with experience in archeological excavation, to France. There he supposedly obtained definite proof that the French workmen were introducing tools into the deposits at Moulin Quignon.

But careful study of Keeping's reports (Evans 1863) reveals little to support these allegations and suspicions. Boucher de Perthes (1864a: 197, 204) observed that Keeping was daily choosing his own spots to work and that it would have been quite difficult for the workers, if they were indeed planting flint implements, to anticipate where he would dig. I tend to agree with Boucher de Perthes (1864a: 194-195) that Keeping, loyal to his patron Evans, was well aware that he had been sent to France to find evidence of fraud and that he dared not return to England without it. Nevertheless, a report by Evans (1863), based on Keeping's account, was published in an English periodical and convinced many scientists that Boucher des Perthes was, despite the favorable conclusions of the scientific commission, the victim of an archeological fraud.

Boucher des Perthes, however, entertained no doubts as to the authenticity of the jaw, which he had seen in place in the black layer toward the bottom of the Moulin Quignon pit. Stung by accusations of deception, he proceeded to carry out a new set of excavations, which resulted in the recovery of more human skeletal remains. These later discoveries are hardly mentioned in standard histories, which dwell upon the controversy surrounding the far more famous Moulin Quignon jaw.

Boucher de Perthes (1864b) carried out his new investigations so as to effectively rule out the possibility of deception by workmen. First of all, they were carried out during a period when the quarry at Moulin Quignon was shut down and the usual workmen were not there (1864b: 219). Also, Boucher de Perthes made his investigations unannounced and started digging at random places. He would usually hire just one or two workers, whom he closely supervised. Furthermore, he himself would enter into the excavation and break up the larger chunks of sediment with his own hands. In almost all cases, witnesses with scientific or medical training were present. In some cases, these witnesses organized their own careful excavations to independently confirm the discoveries of Boucher de Perthes. Summarizing his discoveries, Boucher de Perthes stated:

> The osseous remains collected in the diverse excavations I made in 1863 and 1864 at Moulin Quignon, over an area of about 40 meters of undisturbed terrain without any infiltration, fissure, or channel, have today reached two hundred in number. (1864b: 238-239).
>
> Among the human remains, one most frequently encounters pieces of femur, tibia, humerus, and especially crania, as well as teeth, some whole and some broken. The teeth represent all ages--they are from infants of two or three years, adolescents, adults, and the aged. I have collected, *in situ*, a dozen, some whole, some broken, and more in passing through a screen the sand and gravel take from the trenches (1864b: 240).

> Doubtlessly, a lot has been lost. I got some proof of this last month when I opened a mass of sand and gravel taken from a bank long ago and kept in reserve. I found fragments of bone and teeth, which still bear traces of their matrix and are therefore of an origin beyond doubt (1864b: 241).

Armand de Quatrefages, a prominent French anthropologist, made a report on Boucher de Perthes's later discoveries at Moulin Quignon to the French Academy of Sciences. Here are some extracts from the report (De Quatrefages 1864):

> On hearing the first results of this research, I encouraged Boucher de Perthes to persevere, and to personally take every necessary precaution to prevent any kind of fraud and remove any doubts about the stratigraphic position of the discoveries. . . .
>
> As the discoveries continued, Boucher de Perthes sent to me, on June 8, 1864, a box containing several fragments of bones from human skeletons of different ages. I noted: 16-17 teeth from first and second dentitions; several cranial fragments, including a portion of an adult occipital and the squamous portion of a juvenile temporal; pieces of arm and leg bones, some retaining their articulator ends; pieces of vertebrae and of the sacrum. The specimens were accompanied by a detailed memoir reporting the circumstances of their discovery.
>
> I examined these bones with M. Lartet. . . . In accord with M. Lartet, I felt it advisable to persuade M. Boucher de Perthes to make further excavations, but this time in the presence of witnesses whose testimony could not in the least be doubted. . . . Among the more important specimens found in these latest excavations are an almost complete lower jaw and a cranium.
>
> All of these finds were made in the course of excavations that were mounted in an on-and-off fashion, without any definite pattern. That is to say, Boucher de Perthes would suddenly proceed to the sites, sometimes alone and sometimes with friends. Doing things like this very clearly renders any kind of fraud quite difficult. During the course of an entire year and more, the perpetrator of the fraud would have had to go and conceal each day the fragments of bone destined to be found by those he was attempting to deceive. It is hardly credible that anyone would adopt such means to attain such an unworthy goal or that his activities would have remained for so long undetected.
>
> Examination of the bones does not allow us to retain the least doubt as to their authenticity. The matrix encrusting the bones is of exactly the same material as the beds in which they were found, a circumstance that would pose a serious difficulty for the perpetrators of the daily frauds. . . . Because of the precautions taken by Boucher de Perthes and the testimony given by several gentlemen who were long disinclined to admit the reality of these discoveries, I believe it necessary to conclude that the new bones discovered at Moulin Quignon are authentic, as is the original jaw, and that all are contemporary with the beds where Boucher de Perthes and his honorable associates found them.

I am inclined to agree with De Quatrefages that the later discoveries of Boucher de Perthes tend to confirm the authenticity of the original Moulin Quignon jaw.

Oakley (1980: 33) gave the following results from fluorine content testing. The original Moulin Quignon jaw had 0.12 percent fluorine, a second jaw had a fluorine content of 0.05 percent. By comparison, a tooth of *Paleoloxodon* from Moulin Quignon had a fluorine content of 1.7 percent, whereas a human skull from a Neolithic site at Champs-de-Mars had a fluorine content of 0.05 percent. Fluorine, present in ground water, accumulates in fossil bones over time. Superficially, it would thus appear that the Moulin Quignon jaw bones, with less fluorine than the *Paleoloxodon* tooth, are recent.

But such comparisons are problematic. We must take into consideration the possibility that much of a fossil bone's present fluorine content could have accumulated during the

creature's lifetime. It is entirely to be expected that the tooth of an animal such as an elephant might acquire a considerable amount of fluorine from drinking water and constantly chewing vegetable matter--much more fluorine than the bone in a human jaw, not directly exposed to water and food. Also, the amount of fluorine in ground water can vary from site to site, and even at the same site bones can absorb varying amounts of fluorine according to the permeability of the surrounding matrix and other factors. Furthermore, fluorine content varies even in a single bone sample. In a typical case (Aitken 1990: 219), a measurement taken from the surface of a bone yielded a fluorine content of 0.6 percent whereas a measurement taken at 8 millimeters from the surface of the same bone yielded a fluorine content of just 0.1 percent. As such, Oakley's fluorine content test results cannot be taken as conclusive proof that the Moulin Quignon jaws were "intrusive in the deposits" (Oakley 1980:33).

If the Moulin Quignon human fossils of Abbeville are genuine, how old are they? In a recent synoptic table of European Pleistocene sites, Carbonell and Rodriguez (1994: 306) put Abbeville at around 430ka years, and I think we can take that as a current consensus. Thus we have good skeletal evidence for anatomically modern humans at roughly the same time as the throwing spears from Schöningen Germany. Thieme gave these spears an age of 400ka years.

The evidence from Schöningen and Moulin Quignon may provide a good reason to revisit several other cases of anatomically modern human skeletal remains (and artifacts generally attributed exclusively to anatomically humans) for which anomalously old ages had been claimed by the original discoverers. These Middle and Early Pleistocene ages were later rejected, often on the basis of radiometric and chemical dates that conflicted with stratigraphic evidence. Given the known sources of error in these radiometric and chemical dating methods, it may be wise to carefully review these cases. Here follows a summary list of some notable examples:

(1) Galley Hill, England: In 1888, a relatively complete anatomically modern human skeleton was found at depth of 8ft (Keith 1928: 250-66) in Middle Pleistocene deposits roughly contemporary with Swanscombe (Oakley and Montagu 1949: 34). Swanscombe is now considered to be about 326ka years old (Carbonell and Rodriquez 1994: 306). Contemporary witnesses saw no signs of intrusive burial and found the overlying strata intact (Keith 1928: 255, Newton 1895). Fluorine and nitrogen ages obtained by Oakley and Montagu (1949) and a radiocarbon date obtained by Barker and Mackey (1961) indicated a Late Pleistocene or Holocene age.

(2) Avenue Clichy, Paris, France: Bertrand (1868) reported the discovery of a partial human skeleton at a depth of 5m in a quarry, in deposits later researchers believed were broadly contemporary with Galley Hill (Keith 1928). Hamy reported additional human bones from the same site, a depth of 4.2m (Bertrand 1868: 335).

(3) Ipswich, England: In 1911, a relatively complete anatomically modern human skeleton was found by J. Reid Moir at a depth of 1.38m below Middle Pleistocene glacial deposits (Keith 1928: 293-5). These deposits appear to be related to the Gipping Till, which is associated with the Anglian glaciation (Bowen 1980, p. 420). The discoverer verified the undisturbed nature of the strata containing the skeleton, ruling out intrusive burial (Keith 1928: 294-5). This would give the skeleton an age in excess of 400ka years.

(4) Terra Amata, France. De Lumley (1969) reported post holes, indicating construction of elaborate shelters, circular stone hearths, and an anatomically modern

footprint. Also found were a projectile point and bone tools, including one characterized as an awl, used for sewing skins. All of the above are normally associated with *Homo sapiens sapiens.* Terra Amata is considered to be 380ka years old (Carbonell and Rodriguez 1994: 306).

(5) Kanjera, Kenya. In 1932 Louis Leakey (1960) found fragments of five human skulls, characterized an anatomically modern (Groves 1989: 291), along with a human femur. The Kanjera fossil beds are equivalent to Olduvai Bed IV (Cooke 1963), giving the Kanjera human bones an age of at least 400ka. Oakley (1974: 257) reported a fluorine content similar to Kanjeran animal bones, but believed nitrogen and uranium content test results indicated a younger age. But earlier uranium tests by Oakley (1958: 53) indicated no discrepancy in the ages of the animal and human bones.

(6) Hueyatlaco, Mexico. Strata containing numerous stone tools of advanced type, associated exclusively with anatomically modern humans, yielded dates of ca 250-300 ka year (Steen-McIntyre et al. 1981).

(7) Buenos Aires, Argentina. An anatomically modern human skull (Hrdlicka 1912: 322) was found beneath an unbroken layer of carbonate rock in a drydock excavation, at a depth of 11m below the bed of the La Plata river (Hrdlicka 1912: 318). The layers containing the skull were from the Pre-Ensanadan formation (Hrdlicka 1912: 321). Modern authorities place the beginning of the Ensenadan at 1.5ma years (Anderson 1984: 41) or 1ma years (Marshall et al. 1982: 1352). Hrdlicka (1912: 2-3) denied any great antiquity to the skull because of its modern form.

(8) Olduvai Gorge, Tanzania. In 1913 Hans Reck (1914a, 1914b) discovered a complete anatomically modern human skeleton in upper Bed II. He looked carefully for signs of intrusive burial and found none. The skeleton had to be removed with chisels from the rock. Uppermost Bed II is give a date of 1.15ma (Oakley et al. 1977: 166). The skeleton, except for the skull, was lost from a German museum in World War II. Protsch (1974) obtained a Late Pleistocene radiocarbon date from a bone fragment thought to be from the original skeleton, using a method now considered unreliable.

(9) Gombore, Ethiopia. A humanlike humerus was found at a site described as an encampment with a shelter and stone tools (Chavaillon et al. 1977). The humerus was characterized as resembling *Homo sapiens sapiens* (Chavaillon et al. 1997: 962) in lateral view. Senut (1981b: 91) says it 'cannot be differentiated from a typical modern human.' The site was given a potassium-argon age of 1.5ma years (Senut 1979: 112-13).

(10) Kanam, Kenya. In 1932, Louis Leakey (1960) found a hominid jaw described by some as anatomically modern (Woodward et al. 1933: 478) in a block of limestone containing Lower Pleistocene faunal remains, equivalent in age to Olduvai Bed I, about 1.7ma to 2.0ma years old (Oakley et al. 1977: 166, 199). The jaws fluorine content was the same as that of mammalian bones from the same Early Pleistocene stratum. Uranium content, however, was lower.

(11) Koobi Fora, Kenya. Femurs (ER 1481, 1472) described as anatomically modern (R. Leakey 1973a: 450; 1973b: 821) were found in a geological context below the KBS Tuff, giving an age of at least 1.9ma years.

(12) Koobi Fora, Kenya. A human talus described as anatomically modern (Wood 1974: 135) was found between the KBS Tuff (1.9ma years) and the overlying Koobi Fora Tuff (1.5ma years).

Fuller discussions of the above-mentioned finds, giving arguments in favor of the skeletal remains and artifacts being as old as the Middle and Early Pleistocene strata in which they were found, are given in Cremo and Thompson (1993). These Early and Middle Pleistocene finds are continuous with numerous similar discoveries of anatomically modern human skeletal remains and artifacts extending back through the Pliocene and earlier. Thinking about the nature of Middle and Early Pleistocene hominids should be informed by these discoveries, which may lead to wider acceptance of a considerably greater antiquity for anatomically modern humans.

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